

IN THE CLAIMS:

Please amend Claims 1, 12, 13, 19, and 21, as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

1. (currently amended): A computer-readable storage medium storing control logic for causing a computer to implement a method of offering a service, described in a service description document, in a communication network, wherein the method includes:

extracting, from the service description document, a first abstract part;

extracting, from the service description document, a second concrete part;

extracting, from ~~[[the]]~~ a binary multimedia document, a content description of the binary multimedia document;

comparing the content description and the description of the abstract constraints extracted from the service description document; and

transmitting an error message, if the content description does not satisfy the abstract constraints,

wherein the first abstract part is adapted to describe at least one message exchanged over the communication network when the service is performed,

wherein the first abstract part includes a description of abstract constraints associated with ~~[[a]]~~ the binary multimedia document,

wherein the second concrete part is adapted to describe information relating to transmission of the messages over the communication network, and

wherein characteristics of the extracted content description ~~correspond to~~ are

determined by the abstract constraints extracted from the service description document, wherein the description of abstract constraints is represented in a schema language and defines a set of minimum constraints that the binary multimedia document must meet to be processed when the service is performed.

2. (previously presented): A computer-readable storage medium according to claim 1, wherein the description of the abstract constraints is represented using semantics of a description language of a content of the binary multimedia document.

3. (previously presented): A computer-readable storage medium according to one of Claims 1 and 2, wherein the description of abstract constraints is represented using semantics defined by a Moving Picture Experts Group 7 (MPEG7) standard.

4. (previously presented): A computer-readable storage medium according to one of Claims 1 and 2, wherein the description of abstract constraints is represented in Extensible Mark-up Language (XML).

5. (previously presented): A computer-readable medium according to one of Claims 1 and 2, wherein the description of abstract constraints is represented in a schema language and includes tags defined using semantics of a Moving Picture Experts Group 7 (MPEG7) standard.

6. (previously presented): A computer-readable storage medium according to one of Claims 1 and 2, wherein the description of abstract constraints is represented in a description language of a content of the binary multimedia document, such that tags are adapted to integrate directly or by reference attributes represented in a schema mark-up language.

7. (previously presented): A computer-readable storage medium in accordance with Claim 6, wherein the description language of the content of the binary multimedia document is defined according to a Moving Picture Experts Group 7 (MPEG7) standard.

8. (previously presented): A computer-readable storage medium according to one of Claims 1 and 2, wherein the description of abstract constraints is represented in a schema language adapted to define a set of minimum constraints.

9. (previously presented): A computer-readable storage medium according to one of Claims 1 and 2, wherein the description of abstract constraints is inserted in a sub-part of the first abstract part and is adapted to describe an abstract structure of messages exchanged.

10. (previously presented): A computer-readable storage medium according to Claim 9, wherein the first abstract part includes a second sub-part adapted to declare at least one elementary message pointing to the description of the abstract constraints.

11. (previously presented): A computer-readable storage medium according to Claim 10, wherein the at least one elementary message is associated with an attribute adapted to specify that the at least one elementary message is of a binary multimedia content type.

12. (currently amended): A method of producing a request for a service offered by a server, which includes a processor, in a communication network, wherein the service is described in a service description document, the method comprising:

reading, by the processor, the service description document;

selecting, by the processor, a first abstract part of the service description document;

extracting, by the processor, a description of abstract constraints[[,]];

selecting, by the processor, [[the]] a binary multimedia document according to the description of the abstract constraints;

producing, by the processor, a request for the server in the communication network[[,]];

extracting, by the processor, from the binary multimedia document, a content description of the binary multimedia document;

comparing, by the processor, the content description and the description of the abstract constraints extracted from the service description document; [[and]]

if at least one characteristic specified by the description of abstract constraints is determined to be missing from the extracted content description, extracting, by the processor, the at least one missing characteristic from the binary multimedia document and adding the at least one missing characteristic to the content description;

comparing again, by the processor, the content description and the description of the abstract constraints extracted from the service description document; and

transmitting, by the processor, the request to the server, if the content description satisfies the abstract constraints,

wherein the first abstract part is adapted to describe at least one message exchanged over the communication network when an operation associated with the service is performed,

wherein the description of the abstract constraints is associated with [[a]] the binary multimedia document,

wherein the request includes the binary multimedia document selected,

wherein characteristics of the extracted content description correspond to the abstract constraints extracted from the service description document.

13. (currently amended): A method of validating a binary multimedia document when a service offered by a server, which includes a processor, in a communication network is performed, wherein the service is associated with a service description document, the method comprising:

acquiring, by the processor, the binary multimedia document;

extracting, by the processor, a description of abstract constraints associated with the binary multimedia document from the service description document;

extracting, by the processor, from the binary multimedia document, a content description of the binary multimedia document[[.]];

comparing, by the processor, the content description and the description of the abstract constraints extracted from the service description document; [[and]]

if at least one characteristic specified by the description of abstract constraints is determined to be missing from the extracted content description, extracting, by the processor, the at least one missing characteristic from the binary multimedia document and adding the at least one missing characteristic to the content description;

comparing again, by the processor, the content description and the description of the abstract constraints extracted from the service description document; and

implementing, by the processor, the service on the binary multimedia document, if the content description satisfies the abstract constraints,

wherein characteristics of the extracted content description correspond to the abstract constraints extracted from the service description document.

14. (previously presented): The method according to claim 13, wherein the description of the abstract constraints is represented in a language describing a content of the binary multimedia document.

15. (previously presented): The method according to one of claims 13 and 14, wherein a language describing a content of the binary multimedia document is defined under a Moving Picture Experts Group 7 (MPEG-7) standard.

16. (previously presented): The method according to one of claims 13 and 14, wherein, in the extracting of the content description, a Moving Picture Experts Group 7 (MPEG-

7) description of the binary multimedia document inserted in the binary multimedia document is extracted.

17. (previously presented): The method according to one of claims 13 and 14, wherein the method is performed during selection of the binary multimedia document to be inserted in a message exchanged during implementation of the service offered by the server in the communication network.

18. (previously presented): The method according to one of claims 13 and 14, wherein the method is performed during validation of a request received by the server in the communication network for implementing the service associated with the service description document.

19. (currently amended): A device for producing a request for a service offered by a server in a communication network, wherein the service is described in a service description document, the device comprising:

a microprocessor;

a read only memory adapted to store a program for producing the request for the service;

a random access memory including registers adapted to store variables modified during execution of the program;

means for reading the service description document;

means for selecting a first abstract part of the service description document, wherein the first abstract part is adapted to describe at least one message exchanged over the communication network when an operation associated with the service is performed;

means for extracting a description of abstract constraints associated with a binary multimedia document from the service description document;

means for selecting the binary multimedia document according to the description of the abstract constraints;

means for extracting, from the binary multimedia document, a content description of the binary multimedia document, wherein characteristics of the extracted content description correspond to the abstract constraints extracted from the service description document;

means for comparing the content description and the description of the abstract constraints extracted from the service description document;

means for extracting the at least one missing characteristic from the binary multimedia document and adding the at least one missing characteristic to the content description, if at least one characteristic specified by the description of abstract constraints is determined to be missing from the extracted content description;

means for comparing again the content description and the description of the abstract constraints extracted from the service description document; and

means for producing a request for the service offered by the server in the communication network, if the content description satisfies the abstract constraints, wherein the request includes the binary multimedia document selected.

20. (canceled).



21. (previously presented): A device for validating a binary multimedia document during implementation of a service offered by a server in a communication network, wherein the service is associated with a service description document, the device comprising:

a microprocessor;

a read only memory adapted to store a program for validating the binary multimedia document;

a random access memory including registers adapted to store variables modified during execution of the program;

means for acquiring the binary multimedia document;

means for extracting a description of abstract constraints associated with the binary multimedia document from the service description document;

means for extracting, from the binary multimedia document, a content description of the binary multimedia document; [[and]]

means for comparing the content description and the description of the abstract constraints extracted from the service description document[[.]];

means for extracting the at least one missing characteristic from the binary multimedia document and adding the at least one missing characteristic to the content description, if at least one characteristic specified by the description of abstract constraints is determined to be missing from the extracted content description; and

means for comparing again the content description and the description of the abstract constraints extracted from the service description document,

wherein characteristics of the extracted content description correspond to the abstract constraints extracted from the service description document.

22. - 27. (canceled).

28. (previously presented): A computer-readable storage medium storing control logic for causing a computer to perform a method of validating a binary multimedia document in accordance with one of claims 13 and 14.

29. (previously presented): A computer-readable storage medium storing control logic for causing a computer to perform a method of producing a request according to claim 12.

30. and 31. (canceled).

32. (previously presented): The method according to claim 5, wherein the abstract constraints are represented in an XML-Schema language or in a Relax-NG language.

33. (previously presented): The method according to claim 6, wherein the attributes are represented in an XML-Schema language.

34. (previously presented): The method according to claim 8, wherein the description of the abstract constraints is represented in a Schematron language.

35. (previously presented): The method according to claim 13, further comprising:

extracting a Moving Picture Experts Group 7 (MPEG7) description associated with the binary multimedia document;

comparing said MPEG7 description and the description of the abstract constraints;

reiterating the extracting of the MPEG7 description, if a characteristic of the MPEG7 description is missing;

extracting the characteristic from the binary multimedia document; and

adding the characteristic to the MPEG7 description.